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1. GENERAL REQUIREMENTS

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2. TECHNICAL SPECIFICATIONS

2.1 PREFACE

The Bidder shall provide all hardware, "system" engineering, software, training, material, maintenance and labor necessary to install and maintain the operation of the E9-1-1 system as specified in this Request for Proposal.

2.2 SYSTEM OVERVIEW

2.2.1 General

The Central Communications equipment shall consist of a digitally based switching technology. Provision shall exist to connect an on-line monitoring, system administration and maintenance position, which can be operated locally or remotely through a standard switched telephone line.

The Central Equipment shall consist of a digital ANI/ALI Controller, interface modules to external circuits and un-interruptible power supply. The ANI and ALI control functions shall be combined into a single digital switch. The Answering Position shall consist of computer allowing the answering and processing of emergency and administrative calls without the need for an external telephone set. The answering, transferring and other processing of calls, display of ANI/ALI information and access to both 9-1-1 and administrative lines are to be provided through the use of a computer workstation and display.

2.2.2 System Architecture and Redundancy

The System Architecture shall be such that the failure of any one component or module will not result in total system failure, but only the loss of the equipment associated with that module. All vital system modules must be protected through the use of redundant modules to ensure single point failure tolerance. It is mandatory that any central processor and audio switching matrix shall be fully duplicated in a hot standby mode. Switch-over shall be automatic and shall not require manual intervention.

The Central Equipment power supply shall be modular and shall include redundancy such that the power supply system is capable of meeting full and continued supply of system power requirements in the event of failure of a single power supply module.

All system buses must be redundant on modules, backplanes and cables to protect against catastrophic failure due to common system bus seizures.

In addition, all Central Equipment modules accessing a common system bus must utilize a fail-safe, tri-state device and secondary relay isolation on all common bus nodes. These relays must automatically fully isolate a Central Equipment module in the event of circuit or on-board fuse failure. The Bidder shall describe their system architecture with respect to the major components or modules, and describe how the system will react to a failure of each major component or module.

2.2.3 Hot Standby

The system shall be capable of hot standby operation on vital modules such that upon the failure of any of those modules, the system shall automatically switch-over to the backup module. The switch-over shall maintain all calls in progress and shall not require any human intervention.

2.2.4 Automated Switch-Over

The system shall be capable of automatic daily switch-over of the hot standby modules. The time of switch-over shall be set from the Maintenance/Supervisor Position. It shall also be possible to perform immediate switch-overs of components from that Position. The switch-over shall maintain all calls in progress.

2.2.5 Audio Signal Processing

Each audio signal entering the Central Equipment shall be converted to its digital equivalent using standard North-American, 64 kbps Mu-law Pulse Code Modulation (PCM). The digitized representation shall be switched and multiplexed, using Time Division Multiplexing (TDM) techniques.

2.2.6 System Monitor

The system shall be equipped with a monitoring capability located at the Central Communications equipment. Information should be provided in a type of digital display format and monitor all voltages, power breakers and system alarms of the Central Communications equipment . Upon a failure condition, it will display an alarm message of a minimum of 12 characters on its LED display and activate up to 4 alarm relays.

2.2.7 Environmental

All Central Communications equipment shall be capable of operation at the following minimum and maximum conditions:

Temperature: from 35 to 120 degrees Fahrenheit

Relative humidity level: 0% to 95%, non-condensing

The central equipment shall be compact and free standing in a footprint no larger than 4 feet wide by 5 feet deep by 8 feet high.

All Central Communications equipment shall conform to FCC Rules part 15, class A (commercial, non-residential radiation and conduction limits) for EMI.

2.2.8 Future Expansion

The ANI/ALI controller described in these specifications shall be capable of meeting today's needs as well as future expansion in order to meet anticipated future growth. It shall be capable of supplying the equipped wired and maximum quantities specified in this document without replacing any in-place common equipment. The system should be installed with adequate processor and hardware to meet this growth.

Bidders shall state the expansion capability of their equipment, describing:

1) Overall system capacities including the number of incoming 9-1-1 trunks, the number of answering positions, the number of telephone lines, etc.

2) How the system can be expanded from its present size in terms of the number of 9-1-1 trunks, answering positions, lines, etc.

2.3 ANI/ALI CONTROLLER

The ANI/ALI controller shall comply with current protocols and shall meet the following standards for a high quality E9-1-1 system.

The ANI/ALI controller must be microprocessor-based using stored program control. It must be capable of advanced digital switching features, such as trunk-to-trunk transfer.

The ANI/ALI controller shall be capable of allowing direct trunking to class 5 offices with ANI and ALI.

2.3.1 Incoming 9-1-1 Trunk Interface

The ANI/ALI controller shall have a loop reverse battery supervision trunk CAMA type interface to the central office. The 9-1-1 trunks shall be provided by the Operating Telephone Company.

2.3.2 Telephone Line Interface

The ANI/ALI controller shall have a 2-wire telephone line interface which may be either loop start, ground start, or reverse battery. Caller-ID functionality with name or name and number delivery should be provided on all telephone line interfaces. The telephone lines shall be provided by the Operating Telephone Company. Caller-ID service must be purchased from and provided by the Operating Telephone Company.

2.3.3 Ringdown Line Interface

The ANI/ALI controller shall have a dedicated 2-wire ringdown line interface. The ringdown lines shall be powered by the ANI/ALI controller.

2.3.4 Digital T1 Interface

The ANI/ALI controller shall have the capability to provide a digital T1 interface (DS1 standard) for 9-1-1 trunks, central office lines and ringdown lines. This capability must be a direct connect T1 without the requirement for outboard analog channel bank equipment. Central office lines must have the ability to accept Caller-ID information, including name or name and number information. The T1 lines shall be provided by the Operating Telephone Company.

2.3.5 ISDN Primary Rate Interface

The ANI/ALI controller shall provide an ISDN PRI interface for incoming and outgoing wireline & wireless 911 calls and for incoming and outgoing administrative calls. The product must comply with Telcordia's National Standards.

2.3.6 ISDN Basic Rate Interface

The ANI/ALI controller shall provide an ISDN BRI interface for incoming and outgoing wireline & wireless 911 calls and for incoming and outgoing administrative calls. The product must comply with Telcordia's National Standards.

2.3.7 Enhanced MF Signaling Interface

The ANI/ALI controller shall support Enhanced MF signaling recommended by NENA to meet the requirements of FCC Docket No. 94-102 for Phase 1 Wireless Calls. All call handling features such as conference, transfer and ringback must be supported with wireless calls. The Enhanced MF Signalling trunks shall be capable of supporting both Tandem and PSAP signaling formats. The Enhanced MF Signaling trunks shall be provided by the Operating Telephone Company.

2.3.8 ALI Retrieval System Interface

The ANI/ALI controller must interface to the ALI Retrieval system. It must have at least two output interfaces for transmission and receipt of data to act as an interface between the telephone company's ALI (Automatic Location Information) computers and the customer's premises to display location information at the answering position handling the call. The ALI outputs from the ANI/ALI controller shall be serial RS-232 ports with compatible modems for network access.

2.3.9 CAD System Interface

The ANI/ALI controller shall have an interface to a Computer Aided Dispatch (CAD) system. The CAD output from the ANI/ALI controller shall be a serial RS-232 port.

2.3.10 External Clock Interface

The ANI/ALI controller shall be equipped to interface an external clock source in order to insure consistency of time stamps added to event records and reports from all PSAP equipment. Compatability with Spectracom© NetClock formats 0 and 1 are required as a minimum.

2.3.11 External Wallboard Sign Interface

The ANI/ALI controller shall be capable of interfacing to an external, electronic wallboard sign, capable of displaying real-time call statistics and warning messages. Please elaborate on the capabilities of the proposed solution.

2.4 DATABASE COMPATIBILITY

All CPE and protocols proposed by the Bidder in response to this Request for Proposal shall be compatible with telephone company's E9-1-1 network service. This E9-1-1 service will include the following features, and all CPE and protocols bid must be capable of providing the same arrangements.

2.4.1 Automatic Number Identification

The ANI/ALI controller shall be capable of providing visual display of the emergency caller's telephone number at the PSAP location. The controller must be able to process a minimum of a 20-digit spill for wireless calls.

2.4.2 Automatic Location Identification

The ANI/ALI controller shall be capable of providing visual display of the calling party's street address information based on the ANI.

The ANI/ALI controller must also be capable of extracting geographical coordinate information from the ALI file received and transmitting this information to a geographical mapping software. Please elaborate on the capabilities of the proposed solution.

2.4.3 Forced Disconnect

Operators shall be capable of releasing an existing E9-1-1 call at any time, regardless of whether the calling party has hung up.

2.4.4 Default Routing

In the case of more than one PSAP, now or in the future, this feature shall be activated when an incoming E9-1-1 call cannot be selectively routed due to an ANI failure. Such calls shall be routed to a default PSAP. Each E9-1-1 trunk of the control office shall be assigned a default PSAP.

2.4.5 Alternate Routing

The ANI/ALI controller shall allow E9-1-1 calls to be routed to a designated alternate location if (1) all operators are busy at the primary PSAP, or (2) the primary PSAP closes down for a period of time.

2.4.6 Central Office Transfer

The ANI/ALI controller shall provide the capability for an established E9-1-1 call to be transferred by the operator, via the E9-1-1 tandem office, to another PSAP or some other destination.

2.5 ANI/ALI CONTROLLER FEATURES

2.5.1 Automatic Call Distribution (ACD)

The ANI/ALI controller must be capable of providing intelligent call distribution of 9-1-1 trunks and administrative lines. The ACD must route the call that has been waiting the longest to the first available operator.

2.5.2 Selective Transfer

The ANI/ALI controller must be able to provide the capacity for access to a minimum of six (6) emergency service providers for each of a minimum of sixty-four (64) ESNs. This capability will allow an operator to transfer a call to an agency and establish a conference call.

2.5.3 TDD Detection

The ANI/ALI controller shall be capable of detecting emergency calls originating from Baudot-type Telecommunication Devices for the Deaf (TDD) equipment, and indicating to the operator the presence of the TDD call.

2.5.4 TDD Communication

The ANI/ALI controller must allow operators to communicate with TDD callers directly from their 9-1-1 answering position keyboard, without requiring the use of any external device. Operators must also be capable of manually connecting to emergency calls originating from ASCII-type TDD equipment, as well as originating both Baudot and ASCII calls from their answering position.

The answering position shall allow users to store and access (send) a minimum of forty (40) pre-programmed TDD messages, as well as to print the previous TDD conversations. The pre-programmed messages should be grouped under separate event type tabs for quick reference, such as Police, Fire, EMS and General. The operator shall also have the ability to create a conference between the TDD caller and up to seven (7) non-TDD parties either in 9-1-1 call-taking mode or administrative call-taking mode.

The TDD function must allow an operator to transfer a TDD call to another operator position. For example if a call is answered by an operator it may need to be transferred to either a Police or Fire dispatcher to appropriately handle the call.

The TDD function must allow the operator to alter its operation to comply with ADA requirements for HCO (Hearing Carry Over) and VCO (Voice Carry Over) calls. Controls to allow the selection of the appropriate mode shall be available in the TDD window or display at all times.

2.5.5 Abandoned Call Information

The ANI/ALI controller shall be capable of collecting the ANI digits and processing the ALI lookup regardless of the condition of the call (i.e. on-line or hung up). The ANI/ALI controller shall collect the digits immediately after applying battery to the 9-1-1 trunk and then process the ALI lookup. The ANI/ALI of the abandoned caller must be available for viewing by the operator.

2.5.6 Errored ANI Spills and Party Line Callers

When an erroneous ANI spill is received from the central office, the ANI/ALI controller shall forward all of the ANI digits received to the operator. If an emergency call is received from a party line caller, the ANI/ALI controller shall provide an indication on the display of the operator's answering position.

2.5.7 Call Detail Records

The ANI/ALI controller shall have the ability to provide call detail records after every terminated 9-1-1 call. The record should include but should not be limited to ANI, seizure time, position answered, answer time, disconnect time, incoming trunk number, etc.

The ANI/ALI control shall have the ability to provide call detail records after every terminated administrative call. The record should include but should not be limited to seizure time, position answered, answered time, disconnect time, administrative line number, etc.

Call Detail Records should be in a report format, as opposed to raw data format. This information should automatically be saved as an electronic file in daily and/or monthly formats for permanent storage. Call Detail Records should be retrievable by the ANI or any other 'key-word' search in the record.

2.5.8 Automatic ANI/ALI Print

The ANI/ALI controller shall have an output for ANI/ALI print which allows each incoming E9-1-1 call to be recorded in a printed format on a continuous printer in a real time mode and without operator intervention. The ANI/ALI information should also be stored on the hard disk of the Maintenance and Administration Position.

2.5.9 Automatic TDD Print

The ANI/ALI controller shall have an output for TDD print which allows each incoming E9-1-1 TDD call to be recorded in a printed format on a continuous printer in a real time mode and without operator intervention. The two-way TDD conversation information should also be stored on the hard disk of the Maintenance and Administration Position.

2.5.10 Remote Print of ALI

The ANI/ALI controller must provide ANI/ALI print capabilities to remote locations (e.g. Secondary PSAPs) via dedicated and switched facilities. Remote locations may be equipped with a printer or a fax machine.

2.5.11 Transfer

The ANI/ALI controller shall have the ability to route a call to an on-site or remote location using a single key-stroke. The transfer must work in an E9-1-1 tandem environment or using the ANI/ALI controller to set up the connection using outside lines (trunk-to-trunk transfer). The ANI/ALI controller shall also be capable of transferring ALI information to a fax machine.

In addition, the ANI/ALI controller shall have the ability to transfer both the voice and the ANI/ALI information to an on-site or remote location via dial lines (PSTN) or dedicated lines. This must be performed using a single feature key.

2.5.12 Conference

The ANI/ALI controller must provide the operator the ability to remain on a call and add a new party to the conversation. Any party shall be able to drop out of the conference, leaving the others talking as long as at least one of the other parties possesses supervision on their connection. Conferences should be set up using a single key-stroke without putting the caller on hold - the caller must remain on-line at all times. The system shall allow for up to 7 parties to be placed in a conference simultaneously.

2.5.13 System Wide Speed Calling

The answering position shall allow the operator to automatically dial a pre-programmed system wide speed dial number with the push of a single button. The system shall provide for a minimum of 120 system wide speed calling numbers. The setup for system speed dialing must allow for access from 1 line or from a pool of shared lines by all operators.

2.5.14 Operator Speed Dial

The operator speed dial shall allow the operator to quickly access frequently called telephone numbers from a pre-programmed list. The list shall provide access to an unlimited number of telephone numbers arranged by logical categories. Each list shall be properly identified with a descriptive tab such as Hospital, Admin. and General. The operator shall simply click on the list tab in order to select the corresponding speed dial list and speed dial number.

Each speed dial entry in the speed dial list shall be assignable to a button on the call taker's screen. Each entry shall also be capable of being directed to dial on the currently selected circuit, a particular circuit, or group of circuits.

2.5.15 Ringback / Callback

The ANI/ALI controller shall be capable to ringback a 9-1-1 caller by providing a ringback signal on the incoming trunk or to callback a 9-1-1 caller by dialing the ANI received during the E9-1-1 call setup over a telephone line.

The operator should not have to choose which method has to be used.. The answering position should provide a single feature key to perform this operation. Manual dialing of the number by the operator shall not be necessary.

The ringback of emergency TDD and wireless calls should be performed in the same manner.

The ANI/ALI controller shall allow to program the ANI callback format to meet the requirements for toll calls and access PBX / Centrex lines. The callback format shall be defined on a per NPA-NXX basis.

2.5.16 Hold

The answering position shall allow the operator to place up to eight 9-1-1 or administrative calls on hold. To assist in retrieving the proper call, operators shall be presented with a list of calls on hold, showing the ANI, the ESN, the trunk number, the time and date at which each call was placed on hold. Operators shall also have the capability of retrieving 9-1-1 calls that have been placed on hold at another operator's position.

The ANI/ALI controller shall store the ANI/ALI information while the call is on hold hence avoiding repetition of the ALI request.

2.5.17 Monitor

A supervisor shall have the ability to silently listen to another operator’s telephone conversation from their answering position. Such action shall not cause any audio or visual disturbance at the monitored answering position.

2.5.18 Join

The supervisor shall have the ability to enter an operator conversation, either from the click-free monitor mode or initially from an idle state. The operator, supervisor and caller are then part of a three-way conference.

2.5.19 Barge-In

The operator shall have the ability to barge into an existing call by clicking on the appropriate circuit indicator on their screen. Upon entering any 9-1-1 or administrative call for which ANI/ALI or Caller-ID information is available, such information shall be immediately displayed on the operator’s display.

2.5.20 Privacy

The operator shall have the ability to block the caller from hearing any conversation from the remaining parties in the conference. The caller's conversation shall continue to be heard from the remaining parties.

2.5.21 Muting

The operator shall have the ability to block the caller from hearing and talking with the remaining parties in the conference.

2.5.22 Caller ID

The ANI/ALI controller shall be capable of providing the name and telephone number of the caller, on both digital and analog telephone lines.

2.5.23 Disaster Recovery

The ANI/ALI controller shall provide connectivity to a backup PSAP operator via the public switched telephone network. Pre-configured computers (desktop or laptop) shall have the capability to dial-in the system via the wireline network using a secure protocol with password protection. The backup PSAP operator shall have the same features and operate the same as the primary PSAP.

2.6 ANSWERING POSITION EQUIPMENT

The operator's answering position should be state-of-the-art Pentium based workstation digital technology. The answering position should be computer based and have at least fifty (50) buttons that are programmable for features or line appearances. The answering position should provide an interface to a headset/handset and to the radio system to accommodate both radio and 9-1-1 in the same headset/handset.

2.6.1 Hardware Requirements

The PC based answering position shall consist of a color IBM PC compatible Intel based computer with all necessary audio and data interface equipment. A touch sensitive monitor shall be offered as an option. Multiple monitor support shall be offered as an option.

2.6.2 Software Requirements

The 9-1-1 application software must run under Microsoft Windows™ NT Workstation 4.0 or higher or Microsoft Windows™ 2000 Professional or higher. The screen layout shall allow a high degree of customization to meet the needs of the PSAP.

2.6.3 Main Screen Components

The main screen shall consist of the following components: Menu Bar, Toolbar, Status Bar, Call Information Window, Conference Window, Static Page Window, Multiple Page Window, Keypad, Volume Control Window, Selective Transfer Agencies Window, and TDD Interface Window.

2.6.3.1 Menu Bar

The menu bar shall contain the drop down menus that provide access to all of the answering position features such as setting your screen preferences.

2.6.3.2 Toolbar

The toolbar shall contain buttons that perform specific functions for the answering position such as automatic ringback, monitor and hold.

2.6.3.3 Status Bar

The status bar located at the bottom of the screen shall provide the current status of the answering position, the purpose of a screen component and the time. Connection status to other applications via software API shall also be provided.

2.6.3.4 Call Information Window

The call information window shall display the ANI/ALI information of an active 9-1-1 call. It should also provide additional information on the call such as the ANI decoded, the ESN number, the circuit name, the status of the 9-1-1 caller (on line or hung up) and call statistics (number of emergency calls waiting in the ACD queue and on hold).

2.6.3.5 Conference Window

The conference window shall contain a button for each party involved in the conference beside the operator. Each button shall provide the following indications: supervised circuit, privacy mode, mute mode and TDD.

2.6.3.6 Call on Hold Window

The call on hold window shall maintain a list of all 911 and administrative calls placed on hold by each individual operator. The operator shall be able to click on the circuit in this window to retrieve it from hold. Operators shall be allowed to retrieve calls placed on hold by another operator.

2.6.3.7 Static Page Window

The static page window shall group together in one location, the feature and line buttons that the operator uses most often.

2.6.3.8 Multiple Page Window

The multiple page window shall contain the feature and line buttons arranged by task or frequency of use. Each page shall be properly identified with a descriptive tab such as Emergency, Admin. and General. The operator shall simply click on the page tab in order to select the corresponding page.

2.6.3.9 Keypad

The keypad shall be used to dial telephone numbers or to input numbers as required. The keypad shall also provide access to the speed dial list and offer a redial function. The operator shall have the capability to select a redial number from a drop down list on the keypad. The list shall contain the last numbers dialed at the answering position with the most recent number appearing at the top of the list.

2.6.3.10 Volume Control Window

The volume control window shall be used to control the incoming call volume at the answering position's headset/handset.

2.6.3.11 Selective Transfer Agencies Window

The selective transfer agencies (STA) window shall provide the six emergency response agencies associated with the emergency service zone of the 9-1-1 caller. The buttons in the STA window shall change according to the 9-1-1 caller's ESN. As an option, the STA window shall automatically appear when an emergency call is answered.

2.6.3.12 TDD Interface Window

The TDD interface window shall display the caller and the operator's conversation separately as it takes place (real-time). It shall also contain all the pre-programmed messages grouped into related categories such as police, fire, ems and general.

2.6.3.13 Feature Button

The feature button shall contain the following elements:

- Title bar to identify the label of the feature (Ringback, Hold, etc). The title bar shall be highlighted when the button is selected.
- Button Icon to identify the feature. The icon shall provide a muted or subdued color or indicator when the feature is not available.

2.6.3.14 Circuit Button

The circuit button shall contain the following elements:

- Title bar to identify the label of the circuit (e.g. Trk 01, Oper 5). The title bar shall be highlighted when the button is selected.
- Button Icon to identify the type of circuit (9-1-1, telephone, ringdown, operator position, etc).
- Button Status Icon to identify the status of the circuit (idle, busy, ringing, on hold, out of service).

2.6.4 Touch Screen Operation

The operator shall have the ability to access all of the console features simultaneously from the keyboard, mouse or screen, thus allowing flexible operation.

2.6.5 Call / Line Indicators

The answering position shall indicate incoming emergency and non-emergency calls by both audible and visual means. 9-1-1 trunks shall have a different audible and visual signal from other lines. The answering position shall also have the ability to visually display the status (idle, busy, ringing, on hold and out of service) of each emergency and non-emergency line.

2.6.6 Comment Field

The operator shall be able to enter comments and special instructions in a field of the call information window. This information will then be transferred with the call along with the ANI/ALI data. The comment field shall provide for a minimum of 64 characters.

2.6.7 Relay Control

The answering position shall be capable to control relays (dry contact closures) for general purposes such as opening doors. The Relay Control shall provide for a minimum of 6 relay contacts.

2.6.8 Zoom

The supervisor shall have the capability to set the size of the feature and circuit buttons on the screen. The size shall be set independently for each of the following screen components: Multiple Pages, Static Page, Toolbar, Conference Window, STA Window and Keypad.

2.6.9 System Sounds and Icons

The supervisor shall have the capability to modify the system sounds and button icons.

2.6.10 Shortcuts

The supervisor shall have the capability to assign single or multiple keystrokes to common functions on the answering position (e.g. F2 to release a call).

2.6.11 Screen Layout Lock

The screen layout shall be automatically locked when the operator logs in to the answering position. This shall prevent the operator from modifying the layout.

2.6.12 Screen Layout Restore

The supervisor shall have the capability to restore the original screen layout while making modifications.

2.6.13 Right Click Operation

The operator shall be able to use the right click on the mouse to access the answering position features. For example, by clicking a circuit button with your right mouse button, you can choose to release it or put it on hold.

2.6.14 Print Capabilities

The answering position shall provide an interface port for automatically printing the ALI and the TDD conversation upon call release. The operator shall also have the capability to print on demand.

2.6.15 Ruthless Interruption

The 9-1-1 application shall automatically move to be on top of any other application running on the answering position upon an incoming 9-1-1 call.

2.6.16 Previous Calls

At a minimum the operator shall be able to view the last 75 calls released at the answering position. It shall be possible to initiate a call-back, if necessary, or just check out the details of previous calls.

2.6.17 Wireless Call Handling

Wireless calls shall be presented and include all standard call-handling features. Handling of a wireless call should be transparent to the operator in that all telephony features and functions at the operator position are the same as that of a wireline call. Single step ringback is mandatory as the operator shall not be required to perform a manual ANI ringback for wireless calls.

2.6.18 Portable Answering Position

The system shall be capable of providing a portable operator answering positions using the switched telephone network to remotely access the ANI/ALI controller. These laptop or ruggedized computers should be totally self-contained and with landline access interface.

2.6.19 Integration with Norstar™ Key Systems

The system shall be capable of being integrated via software API and Computer/Telephony Adapter with a Norstar key system. All functions of the Norstar 7208, 7310 and 7324 telephones shall be accessible via buttons on the call-takers screen. Functions such as operator speed-dial, hold and release keys shall automatically integrate without the need for additional, duplicate function keys.

2.6.20 Instant Recall Recording

The system shall be capable of supporting Instant Recall Recording (call-check) functionality in the PC console. Calls should be accessible by an easy to use Windows™ interface and provide a minimum of 8 hours of recording time. An option to erase all old calls on a timed basis or when the disk drive in the PC console reaches a certain percentage of full should be provided. The ability to also record the active radio channel simultaneously is considered a benefit. All recordings should indicate the type of call (9-1-1, administrative or radio) and allow the operator to enter textual information about the call, if desired. For 9-1-1 calls, the ANI of the caller shall be automatically entered in the text field associated with the call recording.

2.6.21 API Interface to Other Applications

The system shall provide an open API interface to allow other applications resident on the same PC console to receive information from the 9-1-1 system. This interface should provide, as a minimum, the following types of information to client programs: call status, ANI/ALI information, etc. Each vendor shall indicate and make available copies of their respective API's and furnish a list of applications that have been interfaced to their PC console software. Types of applications may include (but are not limited to): IRR, mapping and CAD programs.

2.6.22 Auto-Answer and Greeting Options

The system shall provide the ability to automatically assign 9-1-1 calls to an available operator without requiring the operator to press any keys to accept the call. A warning “zip” tone shall be provided to the operator prior to being connected to an incoming call.

As an option, the system may also enable the operator to record a greeting message, which will be played automatically to the caller immediately after the call is answered by the operator.

2.7 INTELLIGENT SECONDARY POSITION

The system should support the ability to provide a direct voice connection from the ANI/ALI controller to the secondary site and display the ANI/ALI data. Calls shall be able to be transferred to the secondary site directly without the existence of a tandem, but using a dedicated OPX-type line and data circuit. All features of the primary location should be available at the secondary site.

The system should also support the ability to provide a dial-up modem connection to allow a remote data printout of the operator display screen information. This option should be designed to make use of fax machines already in place at such locations as volunteer fire stations to assist the responding fire personnel with emergency dispatch.

2.8 CABLES

All cables, including those to printers, modems, terminals, etc., shall have connectors at both ends to facilitate movement of the equipment. Appropriate shielding may be required.

2.9 UNINTERRUPTABLE POWER SUPPLY (UPS)

The ANI/ALI controller and all E9-1-1 answering positions shall each be equipped with a UPS which shall sustain operation for a period of not less than twenty (20) minutes.

2.10 REMOTE MAINTENANCE AND ALARM DIAL-OUT

Using the Maintenance/Supervisor Position and a telephone line, it shall be possible to dial into the ANI/ALI controller and perform tests, view alarms, diagnostics, real-time operator and trunk activity or reconfigure the ANI/ALI controller.

On the same port that is used to dial into an ANI/ALI controller, the controller shall be able to dial-out in case of critical alarms. This port shall be equipped with an internal modem and when the system dials-out, it shall check for a carrier and then send an ASCII message.

2.11 MAINTENANCE/SUPERVISOR POSITION

A Maintenance/Supervisor Position shall be provided with the system. The position shall have a minimum of three (4) different security levels, protected by separate passwords. The position shall allow for:

2.11.1 Module Testing

Each of the ANI/ALI controller modules shall be easily selected and tested individually. Three types of test shall be available per module: digital, analog and tone tests.

2.11.2 Alarms

Every module within the ANI/ALI controller shall carry out certain tests on a continual basis and report to the maintenance position any observed failures.

Three types of alarms shall be reported at the maintenance position:

Critical - A critical alarm shall produce audible and visual indications at the maintenance position.

Major - A major alarm shall produce a visual indication at the maintenance position.

Minor - A minor alarm shall result in an entry in a diagnostic report.

Possible conditions that may cause these types of alarms shall include, but shall not be limited to:

- CPU failure
- Audio Matrix failure
- ALI Computer Link failure
- Emergency Trunk failure
- Operator Console failure
- Peripheral Module failure
- Maintenance Position failure
- Power Monitor failure

All alarms shall be reported in the form of diagnostics in a diagnostics log. A diagnostic message may include any of the following:

Details of Critical or Major Alarm

Minor Alarm

- Status Report of the System
- Manufacturer Tracking Information Codes

Alarms shall also be capable of activating an external device via a relay.

2.11.3 System Activity Monitoring

Emergency trunk activities, 9-1-1 call queuing, and 9-1-1 console activities shall be monitored in a real-time mode.

2.12 Management Information System

The Bidder shall provide a Management Information System that will track the incoming calls and provide the PSAP management personnel with real time information and strategic management reports. It should be user friendly and capable for generating reports for varying time periods. Reports shall include, but not be limited to:

1. Total number of calls received
2. Number of abandoned calls
3. Number of calls on a per trunk basis
4. Number of calls on a call type basis
5. Number of calls transferred
6. Number of calls on a per position basis
7. Average time to answer
8. Average length of call
9. Average hold time
10. Total usage on a per circuit / position basis

2.12.1 System Reconfiguration

The Maintenance/Supervisor Position shall allow the user to reconfigure many parameters associated with entities in the system database. The list of parameters shall include, but is not limited to the following:

- Modify the answering positions parameters
- Modify the operator login ID information and permission
- Modify the 9-1-1 trunk parameters
- Modify the CO line parameters
- Modify the ringdown line parameters
- Assign a module or a port

A command line interface (CLI) shall also be available at the Maintenance/Supervisor Position to give the user the ability to:

- quickly view a multitude of system settings for each entity (9-1-1 trunk, operator, etc.)
- reconfigure advanced settings to adapt the system to the exact requirements of a particular setup without technical assistance from the manufacturer
- customize the system according to the operational preferences of a particular setup
- upgrade the system for new or expanded uses
- safeguard the system by backing up the system database

- troubleshoot the system

Commands shall be typed in script language to direct the Maintenance/Supervisor Position interface to perform an action and display the results. Two password-protected levels of access shall be provided: read only, for users who need to view system settings but are not authorized to modify them, and read/write, for users who need to modify system settings.

2.12.2 Paperless Operation

All Maintenance Logs, Statistics, CDR, ALI Information and TDD conversations should have the ability to be saved in electronic format. The data generated from these reports shall be exportable to 'off the shelf' database or reporting software. These files should also be backed up to a removable medium such as floppy disk or tape for secure storage.

2.13 CONSOLE ACCESSORIES

2.13.1 Headset

The headset shall be a Plantronics Supra Series or equivalent. It shall be a lightweight headset equipped with a headset earpiece speaker, a microphone, a 10-foot coiled cord with quick disconnect and a microphone pre-amplifier with volume control.

2.14 TRAINING REQUIREMENTS

Training on all system functions shall be provided by the Contractor prior to acceptance of the system. Training will include sufficient information and experience to familiarize personnel (operators and supervisors) with system features and operations for their particular assignments.

The Purchaser shall provide acceptable classroom space for training sessions. Student to instructor ratios for any specific training session should be no greater than 8 to 1.

2.15 MAINTENANCE

Bidder shall specify pricing for continuing maintenance of the total system after the expiration of the initial one year warranty period. Such pricing shall be for Year 2 and Year 3.

3.EXHIBITS

Exhibit A - Configuration Specifications

The system configuration is summarized on this page. The column headings are defined as follows:

Equipped - Including, but not limited to, equipment, software and wiring necessary to provide a working system at time of cutover.

Wired - Including, but not limited to, cabinet, shelves, backplane wiring and power necessary to expand the system by simply adding appropriate interface cards, modules and peripheral equipment.

Individual PSAP Major Equipment

LIST OF DELIVERABLES - PSAP #1

Description	Equipped	Wired
ANI/ALI Controller		
Incoming E9-1-1 Trunks		
Central Office Lines		
Ringdown Lines		
ALI Interface Ports		
CAD Interface Ports		
E9-1-1 PC-Based NT Operator Consoles		
SVGA PC Monitors		
SVGA PC Touch Monitors		
Operator Headsets		
Operator Handsets		
Maintenance/Supervisor Position		
DOT Matrix Printers		
Laser Printers		

Operator Training Sessions		N/A
Supervisor Training Sessions		N/A